

Interconnectable bag and wheeled trunk

Background of the Invention

1. Field of Invention

This invention relates to a wheeled trunk with handle, which has on its lid hooks for attaching a specially designed matching bag thereon whereby the bag is born by the trunk. This invention also relates to a bag specially designed for this purpose, which comprises a plurality of loops that can be quickly and securely bound to the hooks on the trunk.

2. Description of the Related Art

Nowadays when making a long distance travel, especially one that includes taking a public transit vehicle such as airplane, train or tourist coach, most people carry a wheeled trunk or suitcase with contractible handle for containing plenty clothing and other articles of daily use, which nevertheless can be moved with ease. In addition, since a long travel usually includes some walking and short distance activities, the travellers usually also carry a backpack or a satchel along the journey for use in these walking and short distance activities. This invention provides a design in the relevant bag and wheeled trunk thereby these two can be easily interconnected for being moved together. The bag is to be attached securely on the lid of the wheeled trunk during the latter is dragged or left standing on the ground thus the traveller is dispense from carrying the bag on him/her.

When a traveller needs to move around along with his wheeled trunk and bag (for example at an airport, at a railway station or in a hotel), a traditional solution is to put the bag in the trunk. In this way although his/her burden is reduced, the total volume available is also reduced. Another major drawback of this solution is that the traveller probably needs to open the trunk in public in order to take out his/her identity papers or other articles normally put in the bag, which is inconvenient and undesirable for security and privacy reasons. Another traditional solution is that the traveller carries the bag with the hand or on the shoulder. Although the above-mentioned drawbacks can be avoided in this way, it becomes cumbersome and thus affects the security of the traveller.

Brief Summary of the Invention

An object of this invention is to provide a wheeled trunk having coupling means on the lid for easily and quickly fastening a matching bag on the trunk such that a traveller bringing both can drag them simultaneously without much more effort than dragging a wheeled trunk alone.

Another object of this invention is that the coupling means described above can also be used for fastening other objects on the wheeled trunk.

Still another object of this invention is that the coupling means described above would not be easily damaged during the transportation and movement of the wheeled trunk.

A further object of this invention is to provide a bag comprising of loops that can be easily and quickly connected to the coupling means of the wheeled trunk thus the bag can be attached to and borne by the wheeled trunk.

A further object of this invention is that the loops described above are structurally simple, easy to fabricate and does not contain rigid exposed parts which may touch and cause the bearer of the bag uncomfortable or swing off the bag and collide with other objects.

To achieve the previous objects of this invention, on one hand a bag is conceived to comprise a plurality of flexible loops whereof at least one is elastic, for interconnecting with a wheeled trunk. On the other hand, a wheeled trunk is conceived to comprise a plurality of hooks fitted on the lid of the trunk. Preferably each of the hooks comprises a barb to keep the mating loop of the bag from coming off the hook accidentally. Besides, for fear that the hooks could be easily damaged for protruding excessively from the lid of the trunk, the lid should preferably form a plurality of concavities wherein the hooks are fitted such that the height of the hooks protruding from the lid is minimized.

Brief Description of the Several Views of the Drawing

FIG. 1 is a perspective view of a bag attached to a matching wheeled trunk of this invention.

FIG. 2 is a front elevation view of the first embodiment of the bag of this invention.

FIG. 3 is a partially disassembling view of **FIG. 1**.

FIG. 4 is a perspective view of the first embodiment of the hook of the wheeled trunk of this invention.

FIG. 5 is a cross-sectional view of **FIG. 4**.

FIG. 6 is a perspective view of the second embodiment of the hook of the wheeled trunk of this invention.

FIG. 7 depicts an application of the hook of **FIG. 6**.

FIG. 8 is a partially enlarged view of **FIG. 7**, focussed near the hook.

FIG. 9 is a partial perspective view of the second embodiment of the bag of this invention and a matching trunk.

FIG. 10 is a front elevation view of the second embodiment of the bag of this invention.

FIG. 11 is a front elevation view of the third embodiment of the bag of this invention.

FIG. 12 and **FIG. 13** depict other embodiments of the wheeled trunk of this invention regarding the installation of the hooks.

Detailed Description of the Invention

Referring to **FIGs. 1~3**, a combination **90** of a wheeled trunk **10** and a bag **20** is shown. The bag **20** comprises a bag body **21** and a plurality of loops **22** attached to the periphery of the bag body **21**. The wheeled trunk **10** comprises a contractible handle **11** and a lid **12**. The lid **12** further comprises on its outer surface a plurality of concavities **121** in each of which a hook **13** is securely attached on the lid **12** by bolts **14**. The opening of each hook **13** is disposed substantially in the reverse direction to the area enclosed by the hooks **13**.

Now referring to **FIG. 4** and **FIG. 5**, **FIG. 4** is a perspective view of a loop **22** connected to a hook **13** and **FIG. 5** is a cross-sectional view of **FIG. 4**. The hook **13** further comprises a barb **131** to keep the loop **22** from coming off the hook **13** accidentally.

The gap between the barb 131 and the lid 12 is smaller and preferably two times smaller than the cross-sectional diameter (or thickness) of the loop 22 in order that when the bag 20 is swaying one the trunk 10 caused by momentum or external force, each loop 22 cannot easily come off respective hook 13. Because it also becomes more difficult for the loops 22 to enter the hooks 13 passing said gaps as the latter diminish, the terminal of each barb 131 is canted on the same side as the opening of the hook 13 to facilitate entering of the loops 22 into the hook 13.

FIG. 6 is a perspective view of another embodiment of the hook 13 which further comprises through holes 132. **FIG. 7** and **FIG. 8** depict a way in which the through holes 132 can be utilized. A band 30 with a hook 31 at each end passes through the inner space enclosed by the handle 41 of a briefcase 40 with the hooks 31 inserted in the through holes 132 clasping the hook 13, so as to sling the briefcase 40 leaning against the lid 12 of the trunk 10. In addition to the band 30 which has hooks 31, ropes or bands without hook but having appropriate diameter or width can also be used to bind a similar briefcase or handbag to the hook 13 via the through holes 132 by knotting. Therefore each hook 13 may comprise only one through hole 132 and can still perform the above-mentioned function. Of course, the function of the through holes 132 isn't limited to sling a briefcase or handbag in such a way. For example, the user may tie an object of appropriate dimensions and preferably flat-shaped, to the lid 12 of the trunk 10 with a rope or band passing through the through holes 132 of different hook 13 on the lid 12.

In the embodiments shown in **FIGs. 1~3**, the loops 22 attached to the periphery of the bag 20 are made of elastic material and have round cross-sections. Alternatively the cross-section of any loop 22 may be flat or in other shape and some of the loops may be non-elastic. In the embodiments shown in **FIGs. 9~11**, the bag 20 comprises one or more loops 23 which are non-elastic flat bands. It is especially favorable to fit a non-elastic loop 23 at the top of the bag 20 as shown in **FIG. 9**. The advantage of such design is that a bag 20 suspended by a non-elastic top loop 23 on a corresponding top hook 13 can hold its vertical position relative to the trunk 10 regardless of the loading of the bag 20 so the stretching amount and consequently the tension of the elastic loops 22 fitted at lower portions of the bag 20 and connected to their corresponding hooks 13 can maintain unchanged. The bag 20 shown in **FIG. 10** comprises only one non-elastic loop 23 fitted on its top with both remaining loops 22 at its bottom being elastic, whereas the bag 20 shown in **FIG. 11** comprises only one elastic loop 22 and two non-elastic loops 23. A non-elastic loop 23 should have a stretched-out length just enough to reach and link its mating hook 13, whereas an

elastic loop **22** should have a relatively short natural length that the elastic loop **22** must be stretched and elongated in order to reach and link its mating hook **13** thus the restoring tension can hold the bag **20** from swaying around by centrifugal momentum or by external force.

In the embodiments shown in FIGS. 1~3 and 9~11, the bag **20** comprises three loops **22/23** and the trunk **10** comprises also three hooks **13**. In other embodiments of this invention, the quantities of the loops **22/23** on the bag **20** and the hooks **13** on the trunk **10** may be less (but no less than two) or more. The quantities of the loops **22/23** on the bag **20** may also be different than that of the hooks **13** on the trunk **10**. For example, the trunk **10** shown in FIG. 7 may further comprise another hook **13** fitted in the middle of the two lower hooks **13**. The trunk **10** of such design can suit not only a bag **20** with three loops **22/23** as shown in FIG. 2, FIG. 10 or FIG. 11, but also a bag **20** with only two loops **22/23** (preferably a non-elastic loop **23** at the top and an elastic loop **22** at the bottom, not shown in the figures). Of course it can also suit a bag **20** with four loops **22/23** disposed correspondingly (not shown in the figures). Similarly, a bag **20** with four loops **22/23** can suit a trunk **10** with two, three or four hooks **13**. In such cases common specifications should be followed to determine the positions of the loops **22/23** and matching hooks **13**.

FIG. 12 and FIG. 13 depict other embodiments of the way in which the hooks **13** are installed on the lid **12** of the trunk **10**. Please also refer to FIG. 3 for comparison. In FIG. 3, the bolts **14** are substantially perpendicular to the main surface of the lid **12** while in FIG. 12 and FIG. 13 the bolts **14** are substantially parallel to the main surface of the lid **12**.